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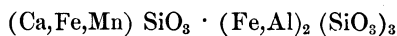
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in which the larger portion of the babingtonite slowly settled, leaving floating all fragments with adhering prehnite. About 3 grammes was thus obtained, which under the microscope showed no appreciable impurity.

The analysis, by Fraprie, was made according to the method of Hillebrand for silicate analysis, except that the manganese was precipitated with bromine water.

	Analysis.	Recalculated to 100% omitting H ₂ O.	Molecular Ratio.	
SiO ₂	52.25	52.66	0.8777	} 0.8800 8.86
TiO ₂	0.18	0.18	0.0023	
Al ₂ O ₃	5.27	5.31	0.0521	} 0.0993 1.00
Fe ₂ O ₃	7.49	7.55	0.0472	
FeO	11.05	11.14	0.1547	} 0.5630 5.67
MnO	1.94	1.96	0.0276	
CaO	20.36	20.52	0.3664	
MgO	0.46	0.46	0.0115	
(K, Na) ₂ O	0.22	0.22	0.0028	
Loss (H ₂ O)	0.29	. . .		
Total	99.51	100.00		

The analysis shows a babingtonite somewhat lower in manganese and much higher in aluminum than the average, but otherwise of normal character. It may be expressed by the formula,



with the two molecules present in the proportion of about $5\frac{3}{4} : 1$.

2. BABINGTONITE FROM ATHOL, MASS.

Babingtonite was first reported from Athol by Shepard * in 1849, and the locality was cited for the mineral in his *Mineralogy*, 1857, p. 183.

J. D. Dana was the first to examine the crystals critically, and his measurements, made on very small crystals, were not conclusive, as they agreed but poorly with the angles of babingtonite from Arendal. His figure and measurements are to be found in his *Mineralogy*, 1854, p. 368, and the question of the identity of this mineral has remained unsettled. In Dana's *System*, 1892, reference is simply made to the description cited above, the matter being still left in doubt.

* A. J. Sci., VIII. (1849), p. 275.

Through the kindness of Professor B. K. Emerson we were given the opportunity of studying a suite of specimens of the Athol babingtonite belonging to the Amherst Mineral Cabinet, and the result of our examination is to establish Shepard's original determination as correct. According to Professor Emerson the locality is no longer accessible, and a very small amount of the mineral is believed to be extant.

The material studied consists of a large matrix specimen and a number of small crystals, all apparently detached from the larger mass. This is a fragment of chloritic gneiss bounded on two surfaces by what were clearly veins. These faces are coated with a thin drusy layer of dark green epidote, upon which, on one side, the babingtonite is implanted. It is in brilliant shining black crystals, most of the faces striated and curved or warped, the largest crystal not exceeding .3 cm. in diameter. Only by using the very smallest crystals, on which the curvature of the faces was least marked, could satisfactory measurements be obtained.

With the babingtonite are a number of sharp cubes of perfectly fresh pyrite. These were deposited before the babingtonite, as is shown by a narrow vein of the latter mineral traversing one of the pyrite crystals. There are also several minute rosettes of prehnite implanted on the babingtonite and a small amount of a platy zeolite which from incomplete tests appears to be apophyllite.

Six crystals were measured and the following forms determined: a (100), b (010), c (001), h (110), g (210), f (320), s (011), o (011), d (101), and w (025).

The following table shows some of the measured angles, together with the calculated values and Dana's corresponding approximate values.

	Measured (Mean).		No. of Read's.	Calculated.		Dana.	
	°	'		°	'	°	'
ab	67	35	8	67	48	69	30
bg	115	20	6	115	24	. . .	
af	59	38	5	59	36	59	30
cd	29	59	3	29	55	26	40
cs	42	28	2	42	44	44	20
co	44	54	1	45	13	44	30
ca	86	52	2	87	28	85	00
cb	87	36	2	87	24	89	00-90° 00'

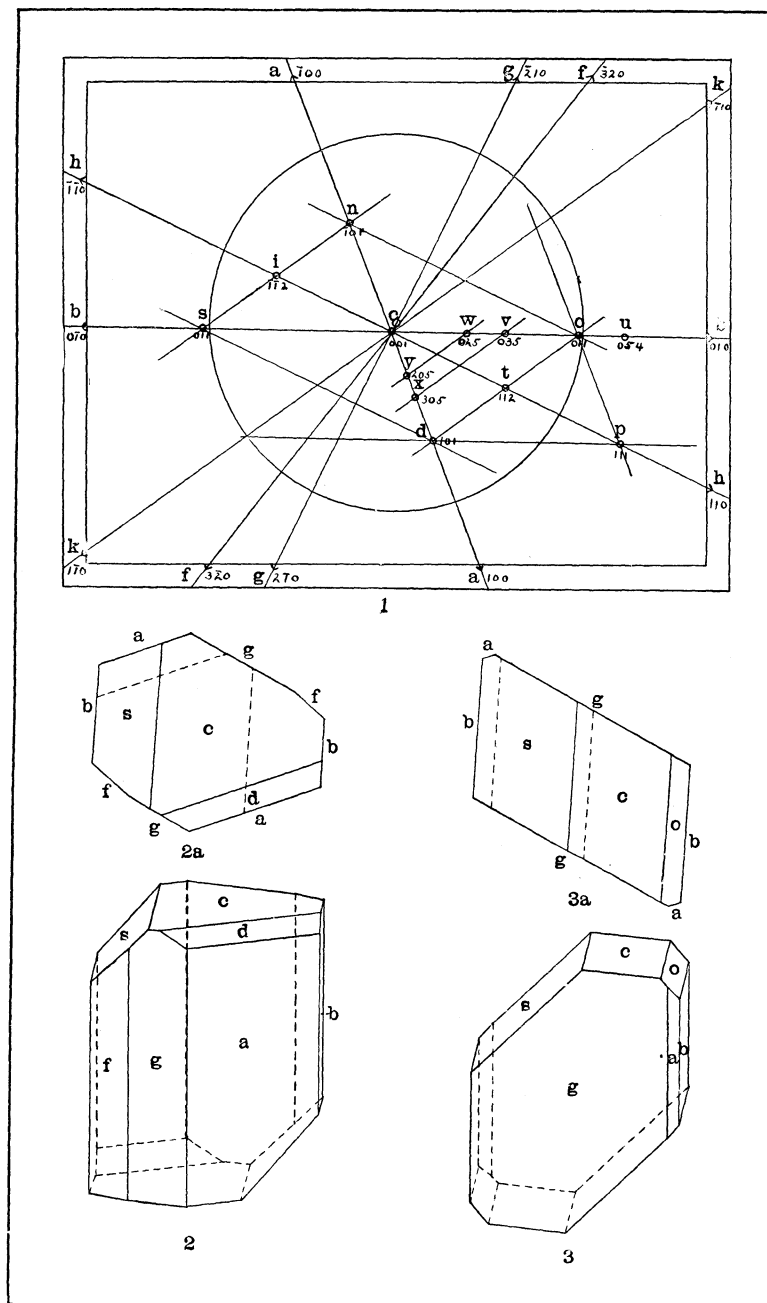
The forms h, o, and w were each observed but once. The others are generally all present and form combinations of the habit shown in Fig-

ure 2. This figure is essentially the same as that given by Dana,* except that in his drawing o is present and g is lacking. The following table gives the identification of Dana's, Hintze's, and Dauber's letters. The crystal figured by Dana was correctly oriented and redrawn and the symbol for f first given by Schrauf in *Atlas der Krystalformen*, Pl. XXX. Figure 2.

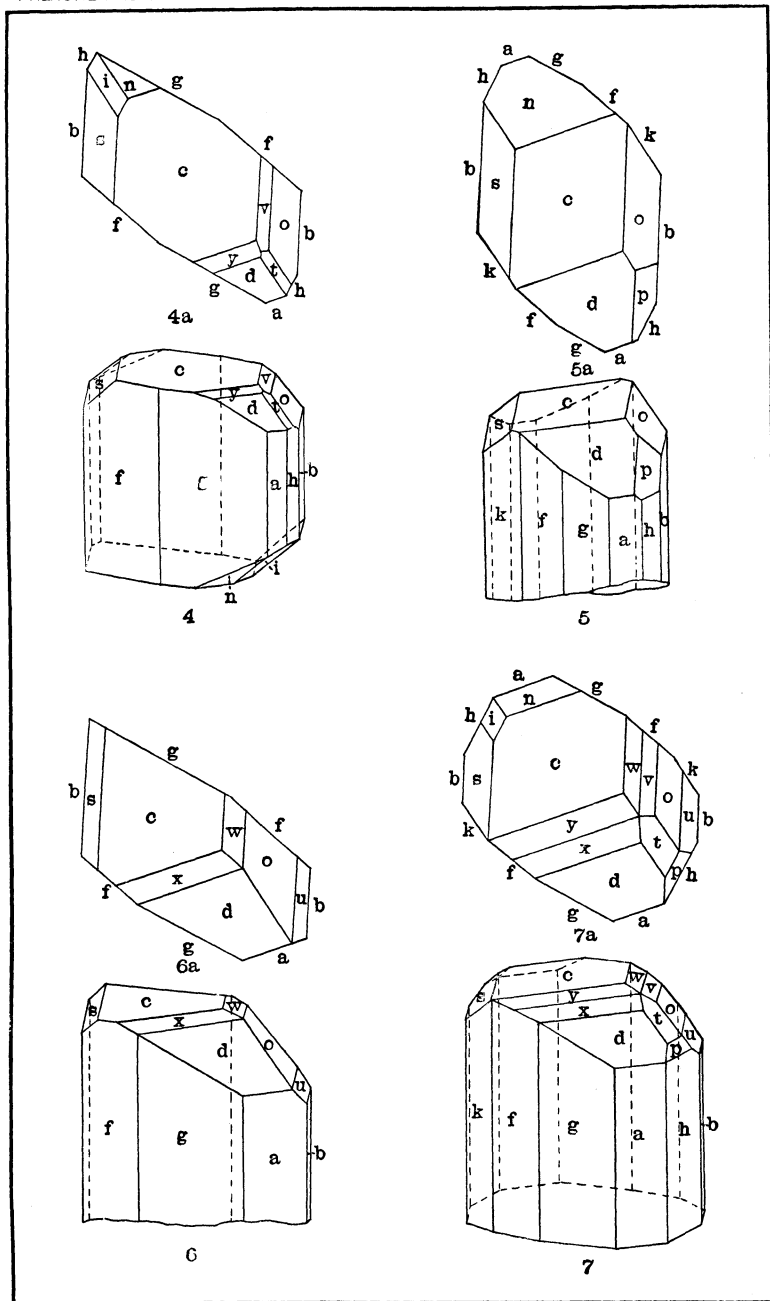
Dana.	Hintze.	Dauber.
I'	M	a
I	m	b
i-3	z	f
$\frac{1}{2}'$	r	d
l	g	o
-l	p	s
0	c	c

Material for an analysis of the Athol babingtonite was not available, but the above crystallographic evidence seems amply sufficient to establish its identity.

* Loc. cit. This figure is copied in Hintze, *Mineralogie*, II. p. 1169, Fig. 425.



F.R.F del.



F.R.F. del.